BRIEFING MATERIALS
FOR 5/4/01 RRG MEETING

RTO West Stage 2
Congestion Management Alternatives

Introduction

This paper presents the essential elements of three congestion management approaches. The first is based upon contract path rights (Contract Path Alternative). The second is based upon flow-distributed path rights (Stage 1 Alternative). The third is based upon a mix of contract path and flow-distributed path rights (Mixed Model Alternative). A fourth alternative is also included that can be used with either a contract path or flow-distributed path approach, the Minimum Zones Alternative (PNGC's proposal).

Each of these alternatives incorporate many of the Stage 1 congestion management components, including a variety of transmission rights (Firm Transmission Rights ("FTR"), Nonfirm Transmission Rights ("NTR"), and Recallable Transmission Rights ("RTR")), an initial allocation of FTRs to reflect pre-existing contract rights and load service obligations, and the sale of additional FTRs. In addition, there are a number of significant issues that are common to all of the models.[1]

The threshold question that needs to be answered is whether the RTO West Day One congestion management model will be based upon flow-distributed path rights, contract path rights, or both. The first step in answering this question is to understand each of the alternatives.

[1] These common issues will need to be resolved with any of the models (with the exception that the Minimum Zones Alternative has already provided answers to some of these issues) and include (A) the number of congestion zones, (B) treatment of residual congestion, (C) treatment of changes in system conditions, (D) netting of FTRs (for purposes of translation of initial rights and for day-ahead scheduling), (E) mitigation of market power, (F) potential oversubscription of existing capability of managed paths, and (G) treatment of non-converted contracts. In order to keep the comparison between alternatives as straightforward as possible (especially as the resolution of these issues are not dependent upon the specific model), the alternatives do not address these issues. However, as the treatment of these issues will be critical to reaching consensus on a complete model, and in order to provide context, they are discussed briefly in Attachment A.

Contract Path Alternative

Contract Links (Managed Paths)	Contract Links that are currently managed or planned to be managed as represented on the 34 Zone Map. *[Could be simplified.]* • Contract Links will need to be identified for BPA's system (although interties are already handled on contract path basis) • Many of the Contract Links are currently rated, others are not
Transmission Rights	Firm Transmission Rights ("FTR") will be issued for all Contract Links • Initial allocation to existing rights holders • Future sales pursuant to mechanics identified in Stage 1 (annual auction, secondary market) • Non-firm transmission rights ("NTR") and Recallable Transmission Rights ("RTR") made available as agreed in Stage 1
Scheduling	• FTRs needed to schedule across Contract Links • Transmission customer identifies the Contract Links it is scheduling over and submits appropriate FTRs
Congestion Management **Inter-zonal**	Managed by users through requirement that they have FTRs to schedule across Contract Links ***As far in advance as possible*:** RTO determines capability of Flow Paths and sets aside "x" percent of TRM CBM; RTO sells the "x"% set aside as Nonfirm Transmission Rights ("NTR") ***Day Ahead:*** *Phase Shifters* – RTO coordinates the operation of phase shifters, taking into account the physical realities of the system and making appropriate accommodations (this is a different operation of phase shifters than at the seams of the RTO) *Curtailment* (limited to NTRs) *Redispatch* Price mitigated to address market power issues Need to determine what RTO will do Need to determine who will pay
Residual Congestion (Intra- and Inter-zonal)	Policy options common to all models
Other General Congestion Management Provisions	Other general provisions regarding the congestion model (e.g., auction of FTRs, release of FTRs, etc.) will be used
Translation of Rights	***PTP Rights to Contract Link FTRs*** • Some PTP contracts are already stated in terms of Contract Links • Other PTP contracts, while not explicit, will have an obvious translation (for example, PTP rights will be stated in terms of source to sink and the Contract Links required for the transaction will be obvious from the map) • If a PTP contract is not explicit but requires the use of a single transmission owner's system and there are internal parallel paths, the transmission owner chooses the Contract Links (and could chose to put the whole contract on one path or could split the contract for any reason) ***Network/Native Load Obligations to Contract Path*** • Based on feasible dispatch, identify point of injection/point of withdrawal • Similar process to the PTP to Contract Link translation • If there is not an obvious correlation to a contract path, a flow distribution could be run to determine where the power flows

Stage 1 Alternative

Flowpaths (Managed Paths)	• Commercially significant congested paths (prototype is the 34 Zone Map). *[Will likely be simplified.]* • Flowpaths could include one or more existing contract paths • All Flowpaths must be rated (some already are, some are not)
Transmission Rights	Firm Transmission Rights ("FTR") will be issued for all Flowpaths • Initial allocation to existing rights holders • Future sales pursuant to mechanics identified in Stage 1 (annual auction, secondary market) • Non-firm transmission rights ("NTR") and Recallable Transmission Rights ("RTR") made available during scheduling process
Scheduling	• FTRs needed to schedule across Flowpaths above some threshold (e.g., 5 or 10%) • Flowpaths required determined by use of Flow Distribution Factors for scheduled injection and withdrawal points
Congestion Management	
Inter-zonal	Managed by users through requirement that Scheduling Coordinators have FTRs to schedule across all Flowpaths above the threshold that are used by schedule
Residual Congestion (Intra- and Inter-zonal)	Policy Options common to all models
Other General Congestion Management Provisions	Other general provisions regarding the congestion model (e.g., auction of FTRs, release of FTRs, etc.) will be used
Translation of Rights	• Translation of Rights as outlined in TOA Agreement including use of feasible dispatch • Details of approach still need to be completed (they were under development when work was refocused to work on congestion model)
Potential Variations	
Bundling	***Allocation*** Translation of existing rights to collection of FTRs that match existing rights ***Scheduling*** Bundles can be used or broken for use or trading in secondary market
Threshold Limits	***De Minimus Threshold*** Transmission customer/Scheduling Coordinator does not have a requirement to schedule or cost responsibility for FTRs below the de minimus threshold ***Scheduling Threshold*** Transmission Customer/Scheduling Coordinator either provides all of needed FTRs or provides FTRs up to the scheduling threshold and the RTO purchases the remainder of needed FTRs on behalf of the Transmission Customer/Scheduling Coordinator or purchases redispatch and Transmission Customer/Scheduling Coordinator reimburses the RTO

"Mixed Model" Alternative

Geographic Distinction Between Contract Path and Flow-Distributed Path	• The western portion of RTO West transmission system (roughly Oregon and Washington) would be managed through flow-distributed approach as developed to date and as it may be modified when completed • The remainder of the RTO West transmission system would be managed through a contract path approach • The exact location of the boundary is an open issue
Managed Paths	• Defined by flow-distributed approach or contract path approach as described under those alternatives
Transmission Rights	• Defined by flow-distributed approach or contract path approach as described in those alternatives • Open issue about what rights would be needed to schedule across the flowpath/contract path interface (similar to issue regarding rights needed to schedule across the RTO West flowpath/Cal ISO interface)
Scheduling	• Defined by flow-distributed approach or contract path approach as described in those alternatives • Open issue about how to schedule across the flowpath/contract path interface[2]
Congestion Management	• Defined by flow-distributed approach or contract path approach as described under those alternatives
Other General Congestion Management Provisions	• Other general provisions regarding the congestion model (e.g., auction of FTRs, release of FTRs, etc.) will be used
Translation of Rights	• Defined by flow-distributed approach or contract path approach as appropriate

[2] For schedules which cross a flowpath/contract path interface, a Scheduling Coordinator will need FTRs either 1) over flowpaths that are determined by using the original transaction's injection and withdrawal points or 2) over flowpaths that are determined by deeming delivery or receipt (as appropriate) at the contract path scheduling point at the interface.

Minimum Zones Alternative (PNGC)

Managed Paths	• Paths between the four large proposed zones (roughly Oregon, Washington, Idaho/Montana/Wyoming and Utah/Nevada) • Approximately 6 paths or less (could be based upon existing contract paths or identified using flow distribution factors for flow between zones) • The number of Managed Paths would not increase as the cost of intra-zonal congestion on a path increased as in the other models. Instead, the RTO would facilitate resolution through upgrades, new generation or load contracts, or other means.
Transmission Rights	Firm Transmission Rights ("FTR") will be issued for all Managed Paths • Initial allocation to existing rights holders • Future sales pursuant to mechanics identified in Stage 1 (annual auction, secondary market) • Non-firm transmission rights ("NTR") and Recallable Transmission Rights ("RTR") made available during scheduling process
Scheduling	• FTRs needed to schedule across Managed Paths
Congestion Management **Inter-zonal** **Residual Congestion (Intra- and Inter-zonal)**	 Managed by users through requirement that they have FTRs to schedule across all Flow Paths that are used by schedule • Policy Options common to all models for Inter-zonal • Many paths managed today would be managed as intra-zonal congestion with a recommended approach to eliminate congestion
Other General Congestion Management Provisions	• Other general provisions regarding the congestion model (e.g., auction of FTRs, release of FTRs, etc.) will be used for Inter-zonal congestion • Intra-zonal congestion would be eliminated when cost effective
Translation of Rights	• With few inter-zonal paths, contract path and flow-distributed paths become very nearly the same • With 6 or less paths, translating rights would be simplified
Other Features	The proposed model includes recommendations for 1) the process to determine when intra-zonal upgrades are needed and who will pay for them, 2) the use of contracts with generators for congestion redispatch and 3) the allocation of intra-zonal congestion costs to loads in the zone and those who wheel through the zone

Attachment A

Issues Common to All Congestion Management Alternatives

A. **Number of Congestion Zones (Areas between Managed Paths) on Day One (or, in the alternative, Number of Managed Paths).** Tradeoff between market efficiency and accuracy. The tariff will need to describe how the RTO splits or consolidates congestion zones in the future. (There are proposals on the table for 34, 22, 10 and 4 congestion zones. A reduction in the number of congestion zones has the potential to mitigate the concerns some parties have expressed about the complexity of some models.)

B. **How the RTO will Handle Residual Congestion, Including Who Pays (Includes Intra-zonal Congestion and Congestion on Managed Paths due to Differences between Commercial Model and Actual Operations).** There are a variety of day-ahead, hour-ahead, and real-time mechanisms (including a combination thereof), e.g., phase shifter operation, curtailing NTRs, purchase of redispatch (through FTR buyback, incs/decs, or both), and, as a last resort, curtailment.

C. **How to Handle Changes in System Conditions (e.g., nomograms, outages).** Potentially affects FTRs, the way FTRs are released, and the level of residual congestion. While this issue is common to all models, the impact of system changes will be different for contract path and flow-distributed path approach.

D. **Mandatory vs. Voluntary "Netting" of FTRs (which affects the translation of pre-existing rights and the release of FTRs in the day-ahead market).**

a. **Translation of Existing Rights.** Mandatory "netting" (requiring FTRs for the net flow across a path) would result in the release of more FTRs. Voluntary "netting" (allow FTRs to be used for scheduling separately in both directions) would ensure that the FTRs are available to the rights holder in the event of contingencies

b. **Day-Ahead Scheduling.** To what extent will the RTO provide for firm scheduling on a net basis?

E. **Mitigating Potential Market Power.** While each model has varying degrees of potential market power, all will require mitigation of potential generation market power that can be exercised in the RTO residual congestion mechanics and through FTR "strategic" withholding (accumulation of rights to block access). In the flow-distributed model, an additional issue is the accumulation of rights on minor paths to prevent someone else using a major path).

F. **Oversubscription of Existing Capability of Managed Paths.** There are a number of ways this can be handled. (Puget has a proposal on the table.)

G. **Treatment of Non-Converted Contracts.**

H. **Liquidity.**